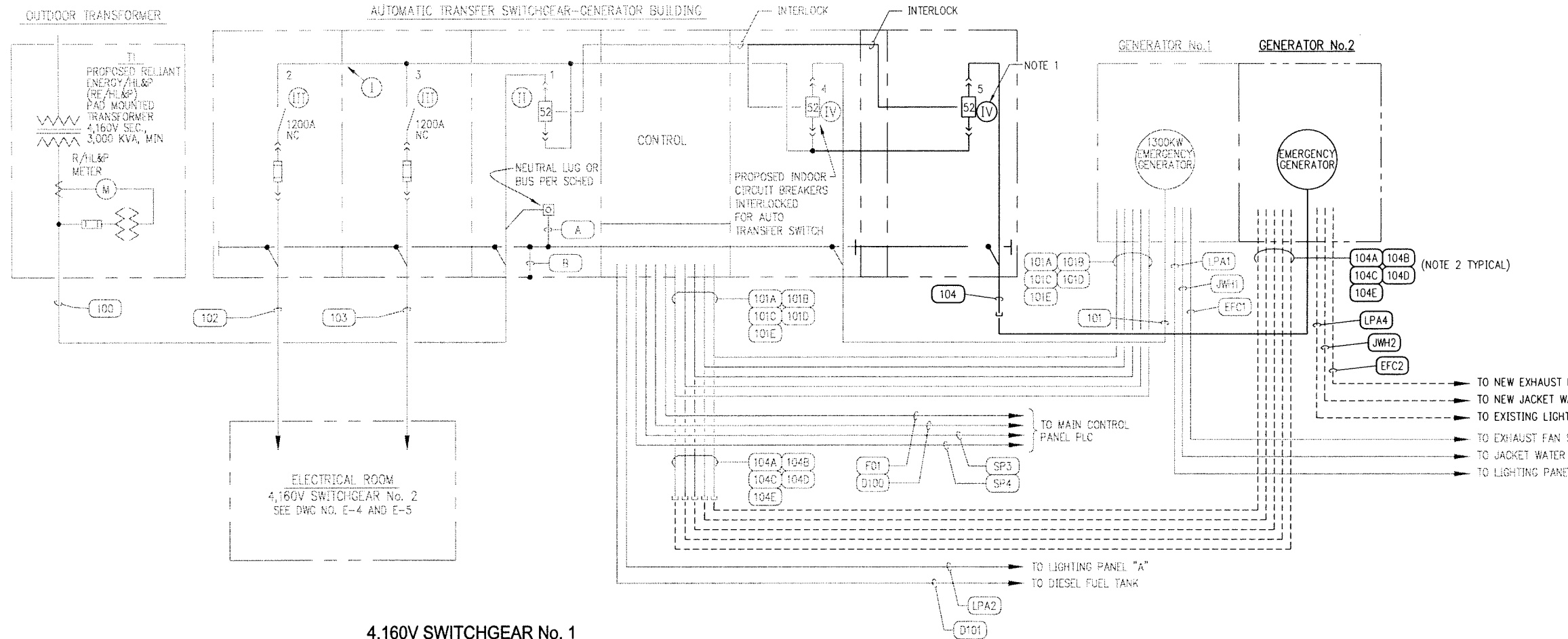


DWG: E:\Projects\Active\_projects\4047-COH (Katy Addicks)\4047-E-03.dwg  
DATE: Dec 15, 2009 3:24pm XREFS: 74331 BDR  
USER: RECEPTIONAREA

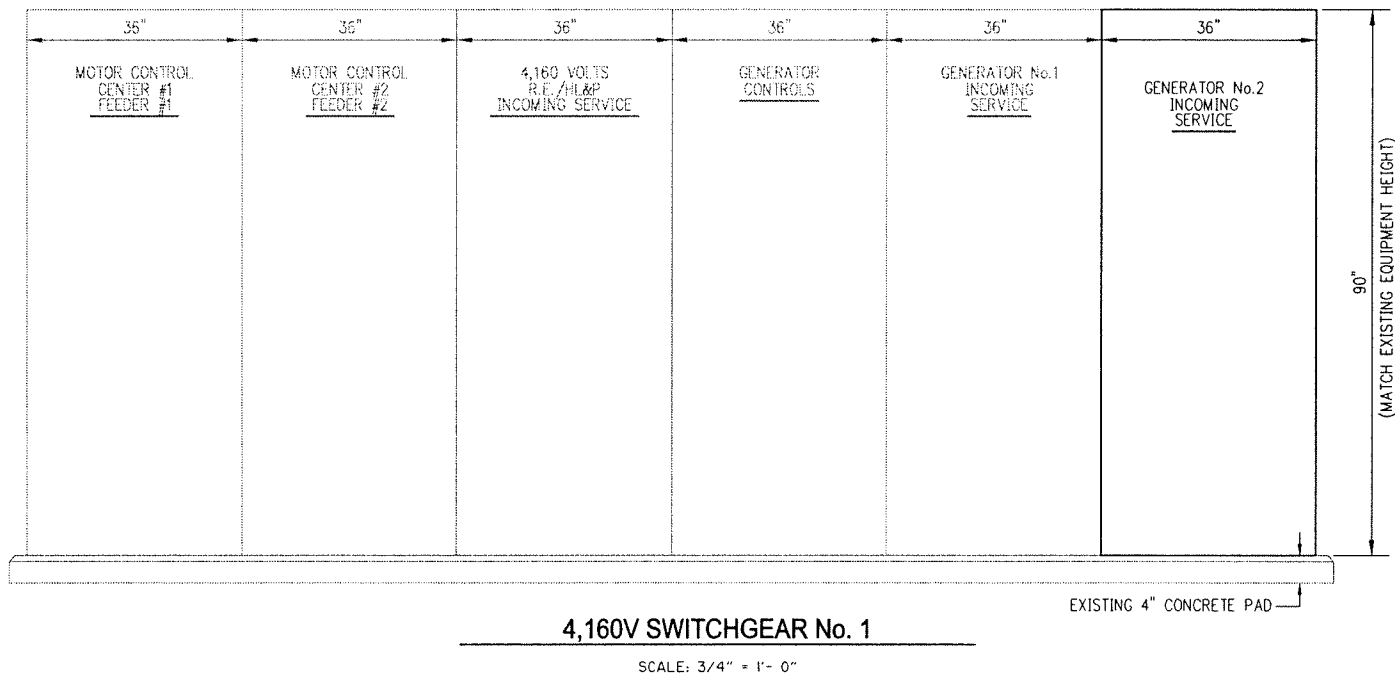


4,160V SWITCHGEAR No. 1

GENERATOR BUILDING

| 4,160 VOLT SWITCHGEAR No. 1<br>DEVICE RATING SCHEDULE |         |  |                |
|---|---------|--|----------------|
| ITEM  | CIRCUIT | DESCRIPTION                                  | RATINGS        |
| I   | --      | AUTOMATIC TRANSFER SWITCH<br>MAIN BUS        |                |
|   |         | VOLTAGE RATING                               | 5 KV           |
|   |         | CURRENT RATING                               | 1200A          |
|   |         | NEUTRAL SIZE & TYPE                          | NONE           |
|   |         | BUS BRACING                                  | 50KA SYM       |
| II  | 1       | T1 RE/H/L&P INCOMING<br>MAIN CIRCUIT BREAKER |                |
|   |         | QUANTITY                                     | 1              |
|   |         | 3 POLE -- TYPE                               | LOAD BREAK     |
|   |         | MOUNTING                                     | DRAWOUT        |
|   |         | VOLTAGE RATING                               | 5 KV           |
|   |         | FRAME SIZE CONTINUOUS                        | 1200A          |
|   |         | TRIP SETTING                                 | 600A           |
| III   | 2<br>3  | SWITCHGEAR MAIN SWITCHES                     |                |
|   |         | QUANTITY                                     | 2              |
|   |         | 3 POLE -- TYPE                               | LOAD BREAK     |
|   |         | MOUNTING                                     | FIXED          |
|   |         | VOLTAGE RATING                               | 5 KV           |
|   |         | FRAME SIZE CONTINUOUS                        | 1200A          |
|   |         | FUSE SIZE                                    | 600A           |
| IV  | *4<br>5 | GENERATOR INCOMING<br>MAIN CIRCUIT BREAKER   |                |
|   |         | QUANTITY                                     | 1 AND 1 FUTURE |
|   |         | 3 POLE -- TYPE                               | LOAD BREAK     |
|   |         | MOUNTING                                     | FIXED          |
|   |         | VOLTAGE RATING                               | 5 KV           |
|   |         | FRAME SIZE CONTINUOUS                        | 1200A          |
|   |         | TRIP SETTING                                 | 300A           |
|   |         | INTERRUPT CAPACITY                           | 50KA SYM       |

\* - DENOTES EXISTING



4,160V SWITCHGEAR No. 1

SCALE: 3/4" = 1'- 0"

4,160 VOLT CONNECTED LOAD ANALYSIS

|                                     | A.      | B.    | C.         |
|-------------------------------------|---------|-------|------------|
| 1 - 300 H.P. MOTOR @ 39.0 AMPS      | = 39.0  | 39.0  | 39.0 AMPS  |
| 4 - 500 H.P. MOTORS @ 63.0 AMPS EA. | = 252.0 | 252.0 | 252.0 AMPS |
| 1 - 750 KVA TRANSF. FEEDER          | = 104.1 | 0.0   | 104.1 AMPS |
| 25% OF LARGEST MOTOR APPROX.        | = 24.3  | 24.3  | 24.3 AMPS  |
| TOTAL                               | 419.4   | 315.3 | 419.4      |

NOTES:

- FOR DESCRIPTION AND RATINGS OF ITEMS INDICATED WITH ROMAN NUMERAL FLAGS, SEE DEVICE RATINGS SCHEDULE ON THIS SHEET.
- SEE SHEET E-7 FOR CONDUIT SCHEDULES, RACEWAY AND WIRE SIZES. SEE RELATED SPECIFICATIONS FOR REQUIRED CONDUIT AND WIRE INSULATION TYPES.

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

MICHAEL H. WOOLEY, P.E.

40433  
TEXAS SERIAL NO.

DECEMBER 2009  
DATE

No Date Revisions App

PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

CDM

3050 Post Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 840-0173  
TBPCE Registration No. F-3043  
consulting - engineering - construction - operations

APPROVED: MW DATE: DECEMBER 2009

DESIGNED BY: MW DRAWN BY: JG

KGI Kalluri Group, Inc.  
Consulting Engineers & Project Managers  
TBPCE Registration No. F-645  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713) 365-9288

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF MICHAEL H. WOOLEY REGISTERED NO. 40433 DECEMBER 16, 2009 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

SURVEYED BY: CB FB NO. 2004-46

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

4,160 V INCOMING SERVICE  
ONE LINE DIAGRAM,  
DEVICE RATING SCHEDULE  
AND LOAD ANALYSIS

ELECTRICAL

WARNING  
0 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DWG NO

E-3

WBS NO.  
S-001000-0027-3

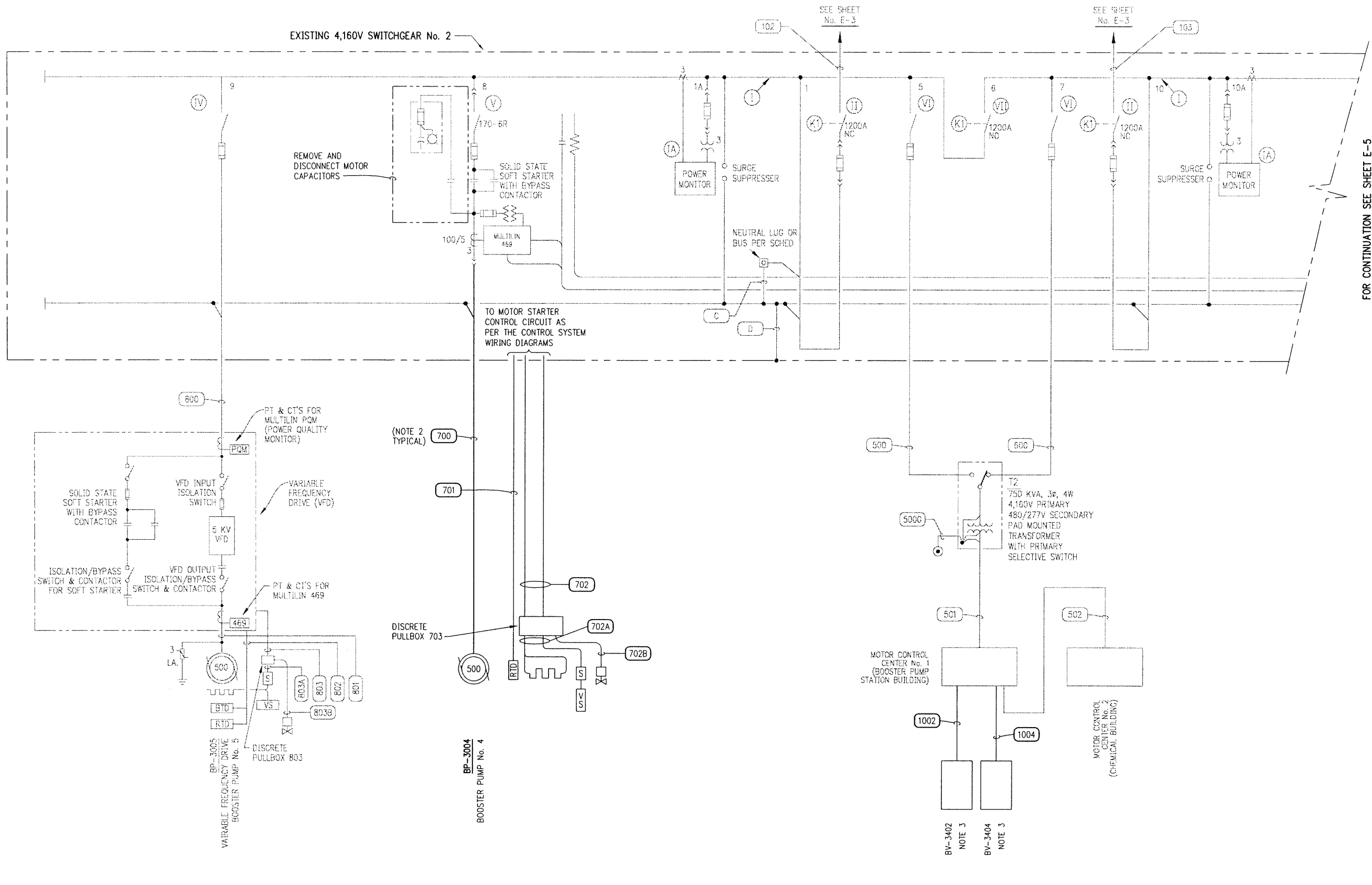
DRAWING SCALE

NO SCALE

CITY OF HOUSTON PM

JOHN MSIGWA, P.E.

SHEET NO. OF



FOR CONTINUATION SEE SHEET E-5

NOTES:

- FOR DESCRIPTION AND RATINGS OF ITEMS INDICATED WITH ROMAN NUMERAL FLAGS, SEE DEVICE RATINGS SCHEDULE ON SHEET E-6 FOR INFORMATION
- SEE SHEET E-7 FOR CONDUIT SCHEDULES, RACEWAY AND WIRE SIZES. SEE RELATED SPECIFICATIONS FOR REQUIRED WIRE INSULATION TYPES.
- CONNECT NEW CONDUCTORS ASSOCIATED WITH MOTORIZED VALVE ACTUATORS TO EXISTING BREAKER MCC No.1. MODIFY NAMEPLATE AS REQUIRED

| No | Date | Revisions | App |
|----|------|-----------|-----|
|    |      |           |     |

PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

**CDM**  
3050 First Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 840-0173  
TSP# Firm Registration No. F-3043  
consulting • engineering • construction • operations

APPROVED: MW DATE: DECEMBER 2009  
DESIGNED BY: MW DRAWN BY: JG

**KGI** Kalluri Group, Inc.  
Consulting Engineers & Project Managers  
TSP# Registration No. F-665  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-365-9288

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

SURVEYED BY: CB FB NO. 2004-46

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

4,160V SWITCHGEAR No.2  
ONE LINE DIAGRAM  
SHEET 1 OF 2

ELECTRICAL

WARNING  
0 1  
IF THIS BAR DOES  
NOT MEASURE 1"  
THEN DRAWING IS  
NOT TO SCALE

DWG NO

E-4

WBS NO.  
S-001000-0027-3

DRAWING SCALE

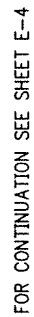
NO SCALE

CITY OF HOUSTON PM

JOHN MSIGWA, P.E.

SHEET NO. OF

|        | DESIGN<br>ULTIMATE<br>HORSE POWER | INITIAL<br>CONSTRUCTION<br>HORSE POWER |
|--------|-----------------------------------|--|
| PUMP 1 | 350                               | 350                                    |
| PUMP 2 | 600 VFD                           | 450 VFD                                |
| PUMP 3 | 600                               | 500                                    |
| PUMP 4 | 600                               | 500                                    |
| PUMP 5 | 600 VFD                           | 500 VFD                                |



1. FOR DESCRIPTION AND RATINGS OF ITEMS INDICATED WITH ROMAN NUMERAL FLAGS SEE DEVICE RATINGS SCHEDULE ON SHEET E-6 FOR INFORMATION.
2. SEE RELATED CONDUIT SCHEDULES FOR RACEWAY AND WIRE SIZES. SEE RELATED SPECIFICATIONS FOR REQUIRED WIRE INSULATION TYPES.


PRIVATE UTILITY LINES SHOWN

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

3050 Post Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 840-0173  
TBPE Firm Registration No. F-3043  
consulting • engineering • construction • operations

**KGI**  **Kalluri Group, Inc.**  
Consulting Engineers & Project Managers  
TBPE Registration No. F-645  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-365-9288

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

SURVEYED BY: CB                      FB NO. 2004-46

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

4,160V SWITCHGEAR No.2  
ONE LINE DIAGRAM  
SHEET 2 OF 2

ELECTRICAL



THIS BAR DOES NOT MEASURE 1 INCH WHEN DRAWING IS NOT TO SCALE.

DWG NO  
E-5

WBS NO.  
S-001000-0027-3

DRAWING SCALE

NO SCALE

CITY OF HOUSTON PM  
JOHN MSIGWA, P.E.

SHEET NO. OF

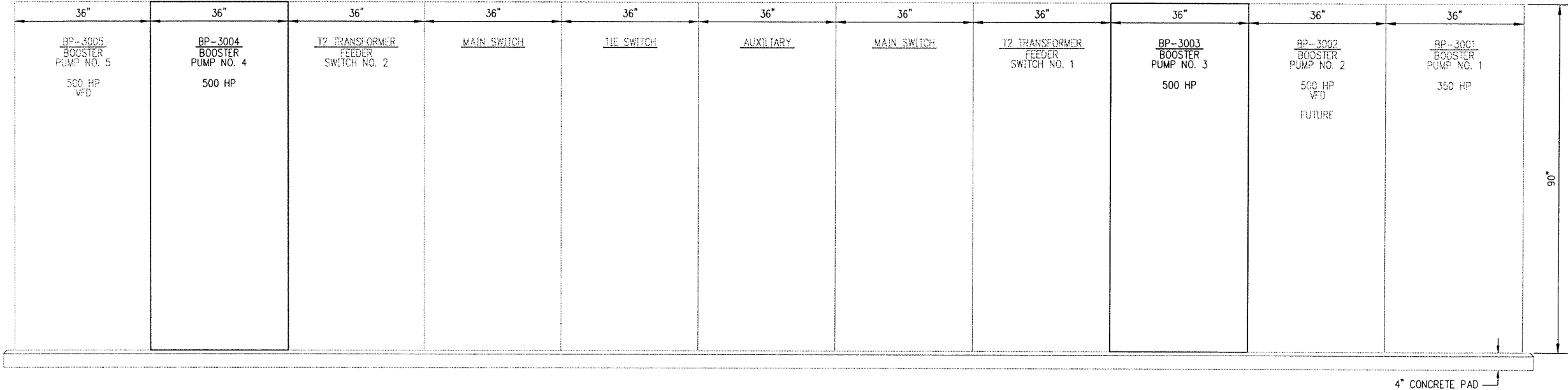
DWG: E:\Projects\Active projects\4047-COH (Katy Addicks)\4047-E-06.dwg  
DATE: Dec 15, 2009 3:23pm XREFS:X-74331 BDR USER: RECEPTIONAREA

| 4,160 VOLT SWITCHGEAR No. 2<br>DEVICE RATING SCHEDULE |         |  | RATINGS FOR<br>PUMP SIZES<br>INDICATED |
|---|---------|--|--|
| ITEM  | CIRCUIT | DESCRIPTION  |  |
| I   | ---     | SWITCHGEAR MAIN BUS  |  |
|   |         | VOLTAGE RATING   | 5 KV                                   |
|   |         | CURRENT RATING   | 1200A                                  |
|   |         | NEUTRAL SIZE & TYPE  | NONE                                   |
| IA  | ---     | BUS BRACING  | 50KA SYM                               |
|   |         | POWER MONITOR  |  |
|   |         | VOLTAGE RATING   | 4160V                                  |
|   |         | CT RATIO   | 1200 : 5                               |
| II  | 1<br>10 | TYPE   | SOLID STATE                            |
|   |         | SWITCHGEAR MAIN SWITCHES<br>WITH KIRK KEYS                       |  |
|   |         | QUANTITY   | 2                                      |
|   |         | 3 POLE -- TYPE   | LOAD BREAK                             |
| III   | 4       | MOUNTING   | FIXED                                  |
|   |         | VOLTAGE RATING   | 5 KV                                   |
|   |         | FRAME SIZE CONTINUOUS  | 1200A                                  |
|   |         | FUSE SIZE  | 600A                                   |
|   |         | INTERRUPT CAPACITY   | 50KA SYM                               |
|   |         | OPTIONS  | NORMALLY CLOSE                         |
|   |         | 500 H.P. BOOSTER PUMP<br>SOLID STATE SOFT START<br>MOTOR STARTER |  |
|   |         | QUANTITY   | 1                                      |
|   |         | MOUNTING   | DRAWOUT                                |
|   |         | SHORT CIRCUIT PROTECTION   |  |
|   |         | 3 POLE -- TYPE   | FUSE                                   |
|   |         | VOLTAGE RATING   | 5 KV                                   |
|   |         | FRAME SIZE   | 400A                                   |
|   |         | FUSE SIZE  | 2R-70A                                 |
|   |         | INTERRUPT CAPACITY   | 50KA SYM                               |
|   |         | MOTOR STARTING CONTACTOR   |  |
|   |         | 3 POLE -- TYPE   | FIXED                                  |
|   |         | VOLTAGE RATING   | 5 KV                                   |
|   |         | SIZE/CURRENT RATING  | 400A                                   |
|   |         | OVERLOAD PROTECTION  |  |
|   |         | TYPE   | MULTILIN                               |
|   |         | CT RATIO   | 469                                    |
|   |         |  | 100 : 5                                |

| 4,160 VOLT SWITCHGEAR No. 2<br>DEVICE RATING SCHEDULE |               |  | RATINGS FOR<br>PUMP SIZES<br>INDICATED |
|---|---------------|--|--|
| ITEM  | CIRCUIT       | DESCRIPTION  |  |
| IV  | 9             | 500 H.P. BOOSTER PUMP<br>VFD DRIVE<br>FEEDER SWITCH          |  |
|   |               | QUANTITY   | 1                                      |
|   |               | 3 POLE -- TYPE   | LOAD BREAK                             |
|   |               | MOUNTING   | FIXED                                  |
|   |               | VOLTAGE RATING   | 5 KV                                   |
|   |               | FRAME SIZE CONTINUOUS  | 400A                                   |
|   |               | FUSE SIZE  | 150E                                   |
|   |               | INTERRUPT CAPACITY   | 50KA SYM                               |
| V   | *2<br>*8<br>3 | OPTIONS  | ---                                    |
|   |               | 500 H.P. BOOSTER<br>SOLID STATE SOFT START<br>MOTOR STARTERS |  |
|   |               | QUANTITY   | 2                                      |
|   |               | MOUNTING   | DRAWOUT                                |
|   |               | SHORT CIRCUIT PROTECTION                                     |  |
|   |               | 3 POLE -- TYPE   | FUSED                                  |
|   |               | VOLTAGE RATING   | 5 KV                                   |
|   |               | FRAME SIZE   | 400A                                   |
|   |               | FUSE SIZE  | 3R-100A                                |
|   |               | INTERRUPT CAPACITY   | 50KA SYM                               |
|   |               | MOTOR STARTING CONTACTOR                                     |  |
|   |               | 3 POLE -- TYPE   | FIXED                                  |
|   |               | VOLTAGE RATING   | 5 KV                                   |
|   |               | SIZE/CURRENT RATING  | 400A                                   |
|   |               | OVERLOAD PROTECTION  |  |
|   |               | TYPE   | MULTILIN                               |
|   |               | CT RATIO   | 469                                    |
|   |               |  | 100 : 5                                |

\* -- DENOTES EXISTING MOTOR STARTER

| 4,160 VOLT SWITCHGEAR No. 2<br>DEVICE RATING SCHEDULE |         |  | RATINGS FOR<br>PUMP SIZES<br>INDICATED |
|---|---------|--|--|
| ITEM  | CIRCUIT | DESCRIPTION                            |  |
| VI  | 5<br>7  | T2 TRANSFORMER<br>FEEDER SWITCHES      |  |
|   |         | QUANTITY                               | 2                                      |
|   |         | 3 POLE -- TYPE                         | LOAD BREAK                             |
|   |         | MOUNTING                               | FIXED                                  |
|   |         | VOLTAGE RATING                         | 5 KV                                   |
|   |         | FRAME SIZE CONTINUOUS                  | 1200A                                  |
|   |         | FUSE SIZE                              | 200E                                   |
|   |         | INTERRUPT CAPACITY                     | 50KA SYM                               |
| VII   | 6       | OPTIONS                                | ---                                    |
|   |         | SWITCHGEAR TIE SWITCH<br>WITH KIRK KEY |  |
|   |         | 3 POLE -- TYPE                         | LOAD BREAK                             |
|   |         | MOUNTING                               | FIXED                                  |
|   |         | VOLTAGE RATING                         | 5 KV                                   |
|   |         | FRAME SIZE CONTINUOUS                  | 1200A                                  |
|   |         | FUSE SIZE                              | NO FUSE                                |
|   |         | INTERRUPT CAPACITY                     | 50KA SYM                               |
|   |         | OPTIONS                                | NORMALLY OPEN                          |



4,160V SWITCHGEAR No. 2 ELEVATION

SCALE: 3/4" = 1'- 0"  
90"H X 36"W X 30"D EA. SECTION

WARNING  
0 1  
IF THIS BAR DOES  
NOT MEASURE 1"  
THEN DRAWING IS  
NOT TO SCALE

DWG NO  
E-6

WBS NO.  
S-001000-0027-3

DRAWING SCALE

NO SCALE

CITY OF HOUSTON PM

JOHN MSIGWA, P.E.

SHEET NO. OF

PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

**CDM**  
3050 West Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7500 Fax: (713) 846-0173  
TBPPE Firm Registration No. F-3043  
consulting • engineering • construction • operations

APPROVED: MW DATE: DECEMBER 2009

DESIGNED BY: MW DRAWN BY: JG

**KGI** Kalluri Group, Inc.  
Consulting Engineers & Project Managers  
TBPPE Registration No. F-545  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-385-9288

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

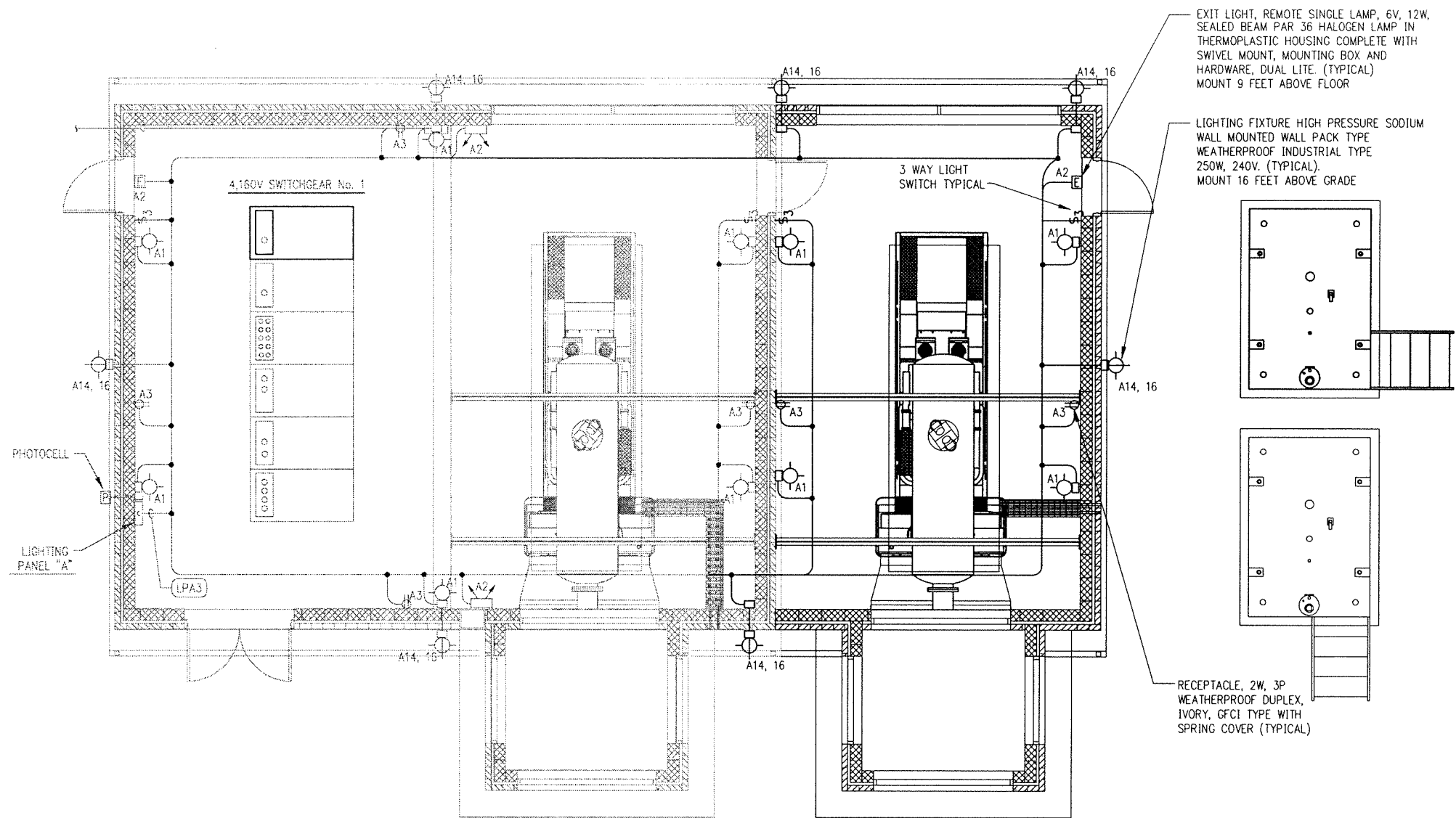
SURVEYED BY: CB FB NO. 2004-46

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

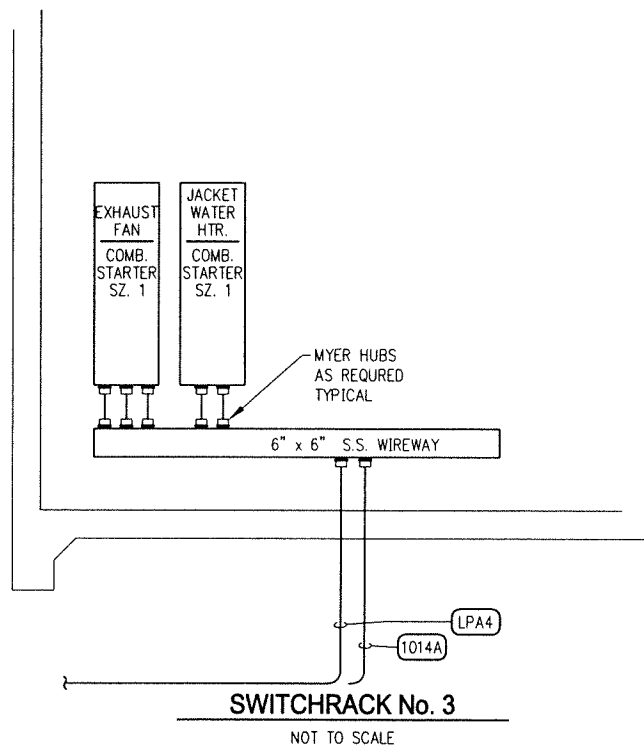
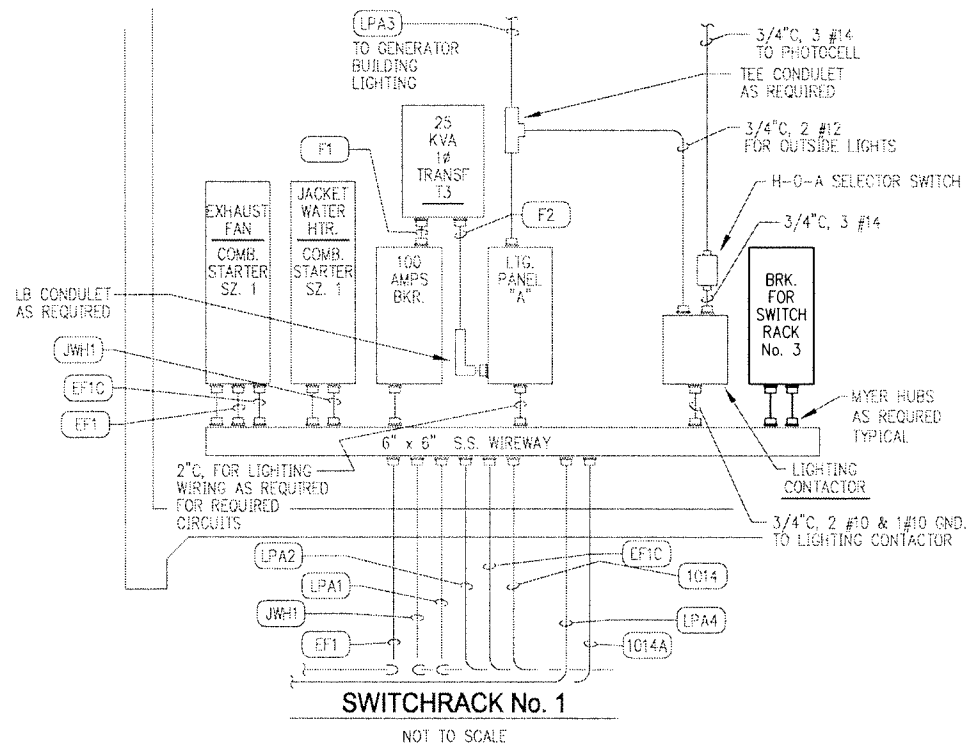
4,160V SWITCHGEAR No.2  
DEVICE RATING SCHEDULE  
AND ELEVATION

ELECTRICAL



GENERATOR BUILDING LIGHTING

SCALE: 1/4" = 1'-0"



| No. | Date | Revisions | App. |
|-----|------|-----------|------|
|     |      |           |      |

PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY  
11/18/03, 11:41, BY KTN

**CDM**

3050 Post Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 840-0173  
TBPPE Firm Registration No. F-3043  
consulting - engineering - construction - operations

APPROVED: MW DATE: DECEMBER 2009

DESIGNED BY: MW DRAWN BY: JG

**KGI** Kalluri Group, Inc.  
Consulting Engineers & Project Managers  
TBPPE Registration No. F-665  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-365-9288

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

SURVEYED BY: CB FB NO. 2004-46

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

GENERATOR BUILDING  
ELECTRICAL LIGHTING PLAN  
AND DETAIL

ELECTRICAL

WARNING  
0 1  
IF THIS BAR DOES  
NOT MEASURE 1"  
THEN DRAWING IS  
NOT TO SCALE.

DWG. NO.  
E-10

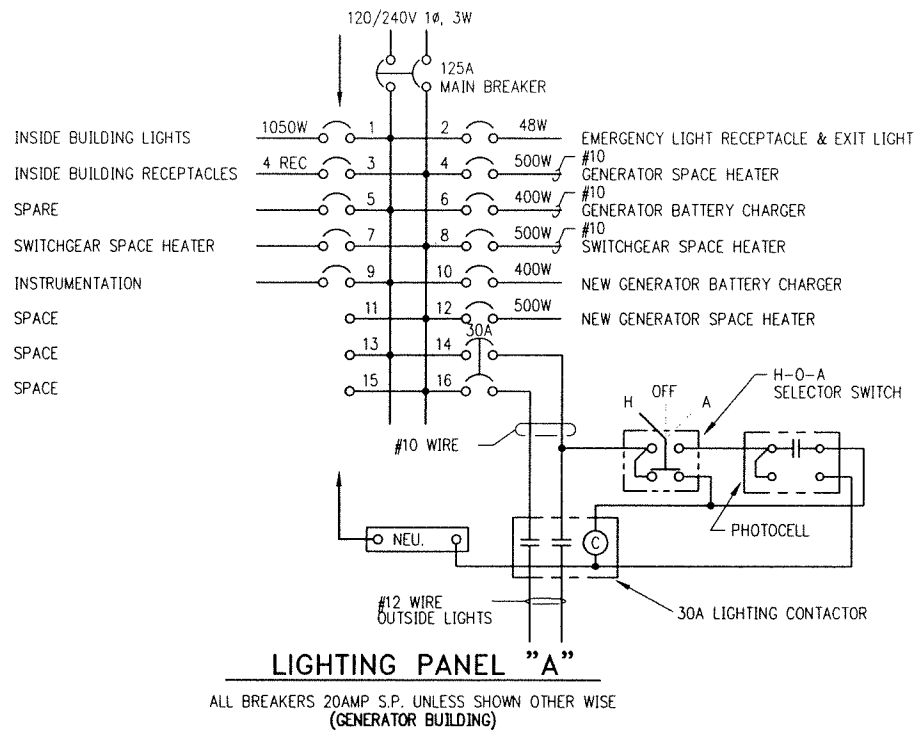
WBS NO.  
S-001000-0027-3

DRAWING SCALE  
NO SCALE

CITY OF HOUSTON PM

JOHN MSIGWA, P.E.

SHEET NO. OF



## LIGHTING PANEL "A" LOAD ANALYSIS

|  |          |                 |
|--|----------|-----------------|
| INSIDE LIGHTS -----                          | =        | 2,280 VA        |
| 1,140 SQ FT @ 2 VA = 2,280 VA OR             |          |                 |
| ACTUAL CONNECTED 6 x 175W x 1.25 = 1312.5 VA |          |                 |
| OUTSIDE LIGHTS 4 x 250W x 1.25 -----         | =        | 1,250 VA        |
| 4 RECEPTACLES @ 180 VA EACH -----            | =        | 720 VA          |
| EMERGENCY AND EXIT LIGHTS -----              | =        | 48 VA           |
| 2 GENERATOR SPACE HEATERS @ 500W -----       | =        | 1,000 VA        |
| 2 GENERATOR BATTERY CHARGER @ 400W -----     | =        | 800 VA          |
| SWITCHGEAR SPACE HEATER @ 500W -----         | =        | 500 VA          |
| INSTRUMENTATION @ 500W -----                 | =        | 500 VA          |
| <b>TOTAL LOAD -----</b>                      | <b>=</b> | <b>7,098 VA</b> |

USE 25 KVA TRANSFORMER  
25 KVA @ 240V., 1Ø = 104 AMPS  
USE 125 AMP MAIN BREAKER

|     |      |           |      |
|-----|------|-----------|------|
| No. | Date | Revisions | App. |
|-----|------|-----------|------|

PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

**CDM**  
3050 First Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 840-0173  
TSP# Form Registration No. F-3043  
consulting • engineering • construction • operations

|                 |                     |
|-----------------|---------------------|
| APPROVED: MW    | DATE: DECEMBER 2009 |
| DESIGNED BY: MW | DRAWN BY: JG        |

**KGI** **Kalluri Group, Inc.**  
Consulting Engineers & Project Managers  
TSP# Registration No. F-665  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-365-0200

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

SURVEYED BY: CB FB NO. 2004-46

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

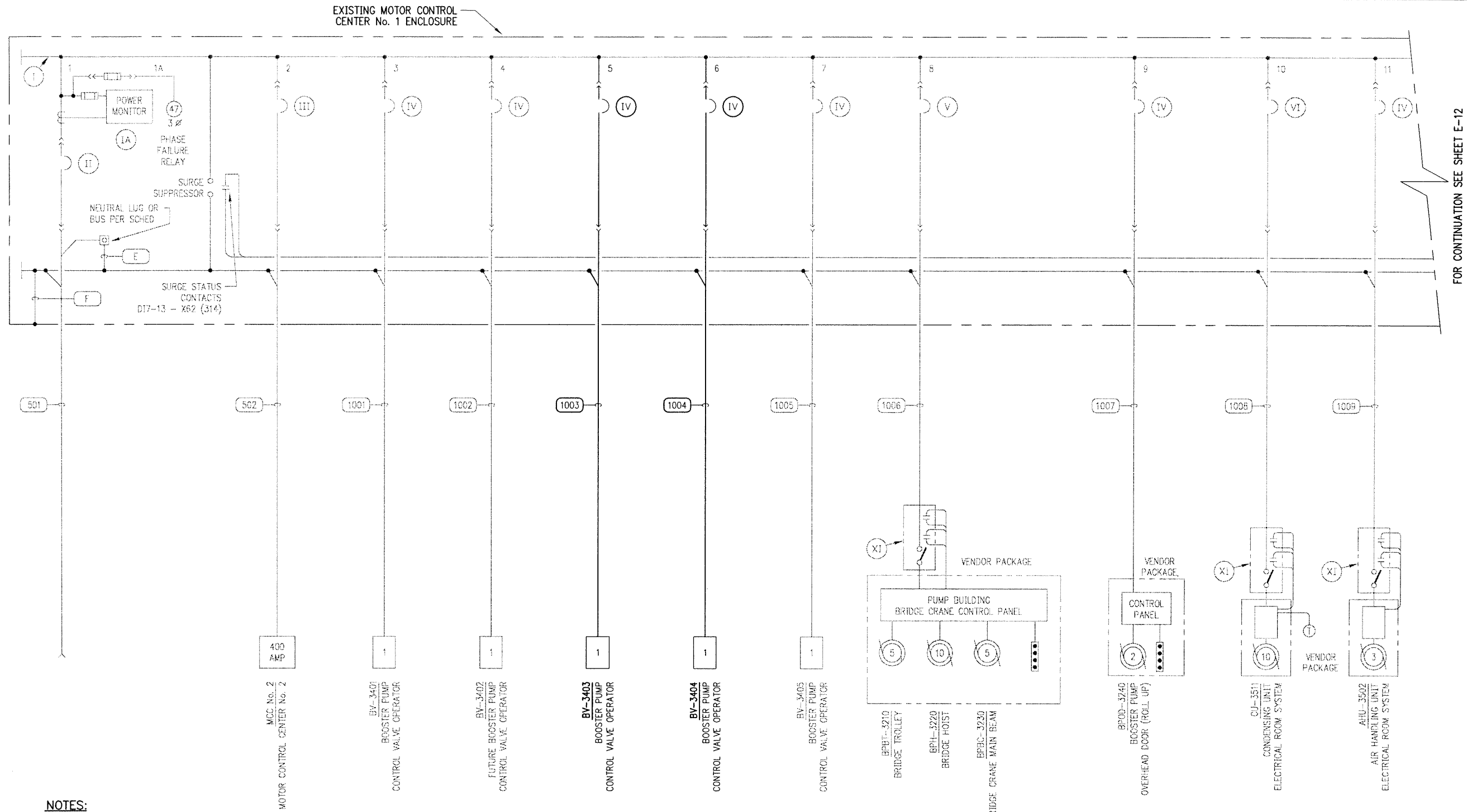
**LIGHTING PANELS  
SCHEDULES**

**ELECTRICAL**

|  |   |
|--|---|
| <b>WARNING</b><br>0 1<br>IF THIS BAR DOES<br>NOT MEASURE 1"<br>THEN DRAWING IS<br>NOT TO SCALE | WBS NO.<br>S-001000-0027-3              |
|  | DRAWING SCALE<br>NO SCALE               |
|  | CITY OF HOUSTON PM<br>JOHN MSICWA, P.E. |
| DWG NO<br><b>E-11</b>  | SHEET NO. OF                            |

USER: RECEPTIONAREA

DWG: E:\Projects\Active\_projects\4047-COH (Katy Addicks)\4047-E-12.dwg  
DATE: Dec 15, 2009 3:23pm XREFS:X-74331 BDR



#### NOTES:

- FOR DESCRIPTION AND RATINGS OF ITEMS INDICATED WITH ROMAN NUMERAL FLAGS, SEE DEVICE RATINGS SCHEDULE ON SHEET E-11
- SEE RELATED CONDUIT SCHEDULES FOR RACEWAY AND WIRE SIZES. SEE RELATED SPECIFICATIONS FOR REQUIRED WIRE INSULATION TYPES.
- MCC ELEVATION SHALL CONTROL IN ESTABLISHING THE REQUIRED AMOUNT OF SPACE REQUIRED.

#### 480V ACTUAL LOAD ANALYSIS - MCC No. 1

|  |              |       | A     | B     | C          |
|--|--------------|-------|-------|-------|------------|
| 5- 15 KW HEATERS                             | @ 22.6 AMPS  | EA. = | 113.0 | 113.0 | 113.0 AMPS |
| 1.5 KVA TRANSFORMER                          | @ 3.10 AMPS  | EA. = | 6.20  | 6.20  | 6.20 AMPS  |
| 1 HP MOTORS                                  | @ 2.1 AMPS   | EA. = | 10.5  | 10.5  | 10.5 AMPS  |
| 1- CRANE CONTROL PANEL                       | @ 30.0 AMPS  | -- =  | 30.0  | 30.0  | 30.0 AMPS  |
| 1- OVERHEAD DOOR CONTROL PANEL               | @ 3.4 AMPS   | -- =  | 3.4   | 3.4   | 3.4 AMPS   |
| 1- 3 HP AIR HANDLING UNIT                    | @ 4.8 AMPS   | -- =  | 4.8   | 4.8   | 4.8 AMPS   |
| 1- 10 HP CONDENSING UNIT                     | @ 14.0 AMPS  | -- =  | 14.0  | 14.0  | 14.0 AMPS  |
| 3- 3 HP MOTORS                               | @ 4.8 AMPS   | EA. = | 14.4  | 14.4  | 14.4 AMPS  |
| 2- 5 HP MOTORS                               | @ 7.6 AMPS   | EA. = | 15.2  | 15.2  | 15.2 AMPS  |
| 1- FEEDER TO GENERATOR BUILDING SWITCHRACK   | @ 66.1 AMPS  | -- =  | 66.1  | 66.1  | 66.1 AMPS  |
| 1- FEEDER TO FLOW CONTROL STATION SWITCHRACK | @ 68.4 AMPS  | -- =  | 68.4  | 68.4  | 68.4 AMPS  |
| 1- FEEDER TO FLOOD LIGHTS (8 KW)             | @ 30.0 AMPS  | -- =  | 30.0  | 30.0  | 30.0 AMPS  |
| 1- 100 KVA TRANSFORMER                       | @ 208.0 AMPS | -- =  | 208.0 | 0.0   | 208.0 AMPS |
| 1- MOTOR CONTROL PANEL No. 2 FEEDER BREAKER  | @ 319.6 AMPS | -- =  | 319.6 | 319.6 | 319.6 AMPS |
| 1- LOT 25% OF LARGEST MOTOR APPROX.          | @ 13.5       | -- =  | 13.5  | 13.5  | 13.5 AMPS  |
| TOTAL  |              | =     | 917.1 | 709.1 | 917.1 AMPS |

FOR CONTINUATION SEE SHEET E-12

| No. | Date | Revisions | App. |
|-----|------|-----------|------|
|-----|------|-----------|------|

#### PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

**CDM**  
3550 First Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 840-0173  
TBPB Firm Registration No. F-3043  
consulting • engineering • construction • operations

APPROVED: MW DATE: DECEMBER 2009  
DESIGNED BY: MW DRAWN BY: JG

**KGI** Kalluri Group, Inc.  
Consulting Engineers & Project Managers  
TBPB Registration No. F-665  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-365-9288

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

SURVEYED BY: CB FB NO. 2004-46

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

**480V MOTOR CONTROL CENTER No.1**  
**ONE LINE DIAGRAM**  
**SHEET 1 OF 3**

ELECTRICAL

WARNING  
0 1  
IF THIS BAR DOES  
NOT MEASURE 1"  
THEN DRAWING IS  
NOT TO SCALE

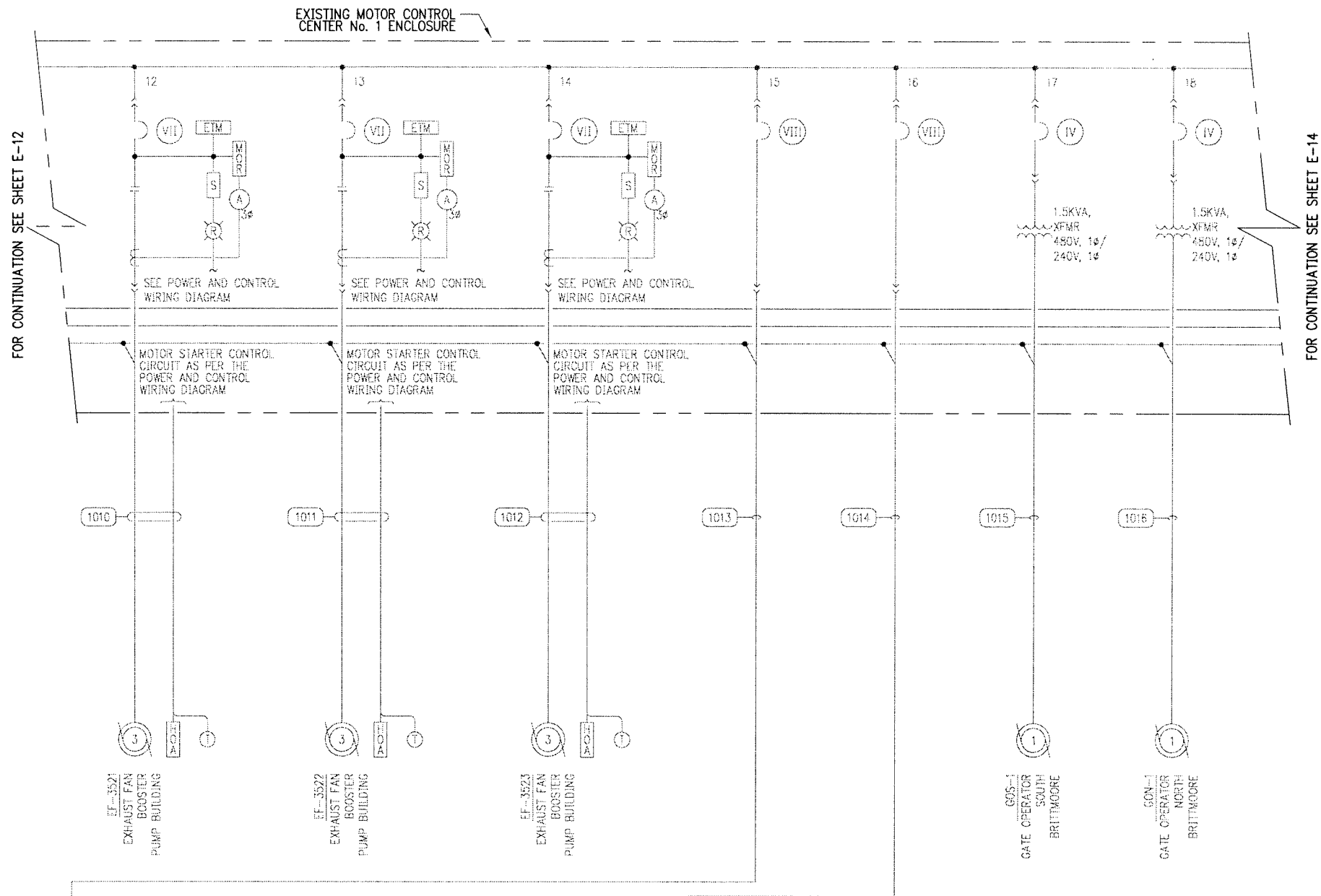
DWG NO  
E-12

WBS NO.  
S-001000-0027-3

DRAWING SCALE  
NO SCALE

CITY OF HOUSTON PM  
JOHN MSIGWA, P.E.

SHEET NO. OF



### SWITCHRACK No. 1 480V LOAD ANALYSIS

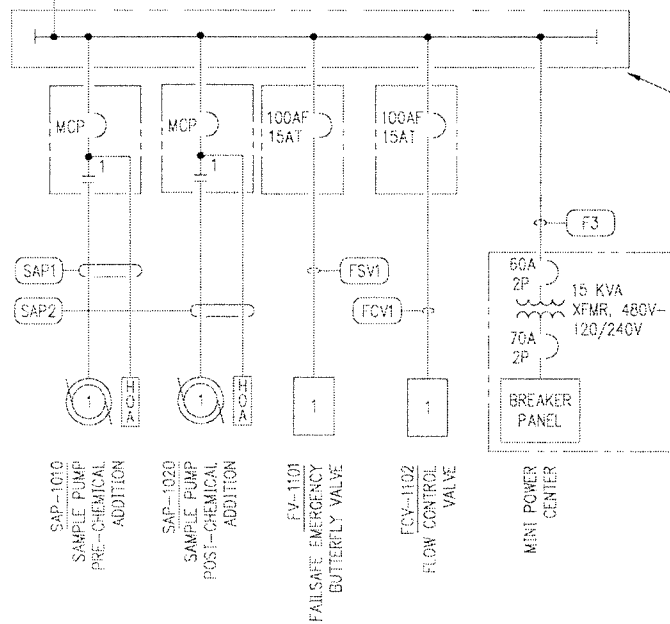
| GENERATOR BUILDING                  |   |           |    | A | B    | C    |
|-------------------------------------|---|-----------|----|---|------|------|
| 1 - 1 HP EXHAUST FAN                | @ | 2.1 AMPS  | -- | = | 2.1  | 2.1  |
| 1 - 1 HP FUTURE EXHAUST FAN         | @ | 2.1 AMPS  | -- | = | 2.1  | 2.1  |
| 1 - 8 KW JACKET WATER HEATER        | @ | 12.0 AMPS | -- | = | 12.0 | 12.0 |
| 1 - 8 KW FUTURE JACKET WATER HEATER | @ | 12.0 AMPS | -- | = | 12.0 | 12.0 |
| 1 - 25 KVA TRANSFORMER              | @ | 52.0 AMPS | -- | = | 52.0 | 0.0  |
| TOTAL                               |   |           |    | = | 80.2 | 28.2 |

### SWITCHRACK No. 2 480V LOAD ANALYSIS

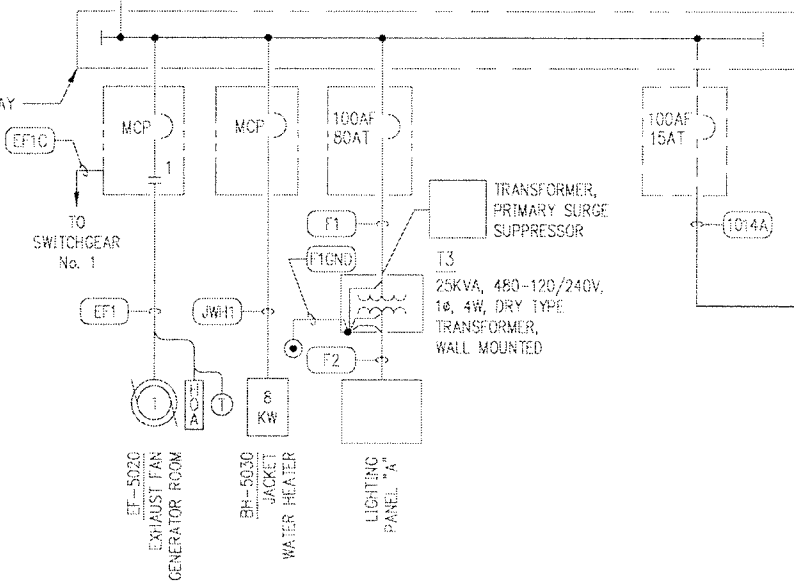
| FLOW CONTROL STATION BUILDING |   |           |    | A | B    | C   |
|-------------------------------|---|-----------|----|---|------|-----|
| 2 - 1 HP CONTROL VALVES       | @ | 2.1 AMPS  | -- | = | 4.2  | 4.2 |
| 2 - 1 HP SAMPLE PUMPS         | @ | 2.1 AMPS  | -- | = | 4.2  | 4.2 |
| 1 - 15 KVA MINI POWER CENTER  | @ | 60.0 AMPS | -- | = | 60.0 | 0.0 |
| TOTAL                         |   |           |    | = | 68.4 | 8.4 |

### SWITCHRACK No. 3 480V LOAD ANALYSIS

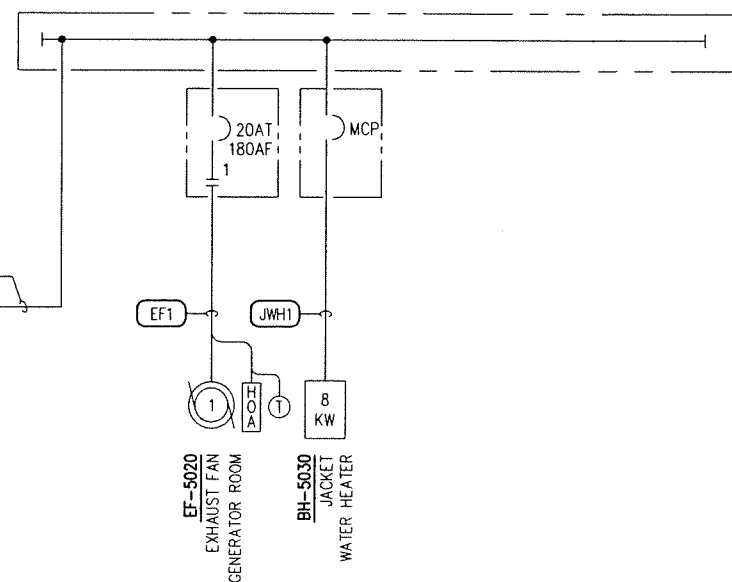
| GENERATOR BUILDING           |   |           |    | A | B    | C    |
|------------------------------|---|-----------|----|---|------|------|
| 1 - 1 HP EXHAUST FAN         | @ | 2.1 AMPS  | -- | = | 2.1  | 2.1  |
| 1 - 8 KW JACKET WATER HEATER | @ | 12.0 AMPS | -- | = | 12.0 | 12.0 |
| 1 - 25 KVA TRANSFORMER       | @ | 52.0 AMPS | -- | = | 52.0 | 0.0  |
| TOTAL                        |   |           |    | = | 66.1 | 14.1 |



SWITCHRACK No. 2  
FLOW CONTROL STATION BUILDING



SWITCHRACK No. 1  
GENERATOR BUILDING



SWITCHRACK No. 3  
GENERATOR BUILDING

#### PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

**CDM**  
3050 Post Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 540-0173  
TSP# Firm Registration No. F-3043  
consulting • engineering • construction • operations

APPROVED: MW DATE: DECEMBER 2009  
DESIGNED BY: MW DRAWN BY: JG

**KGI** Kalluri Group, Inc.  
Consulting Engineers & Project Managers  
TSP# Registration No. F-665  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-365-9288

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

SURVEYED BY: CB FB NO. 2004-46

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

480V MOTOR CONTROL CENTER No.1  
ONE LINE DIAGRAM  
SHEET 2 OF 3

ELECTRICAL

WARNING  
0 1  
IF THIS BAR DOES  
NOT MEASURE 1"  
THEN DRAWING IS  
NOT TO SCALE

DWG NO  
E-13

WBS NO.  
S-001000-0027-3

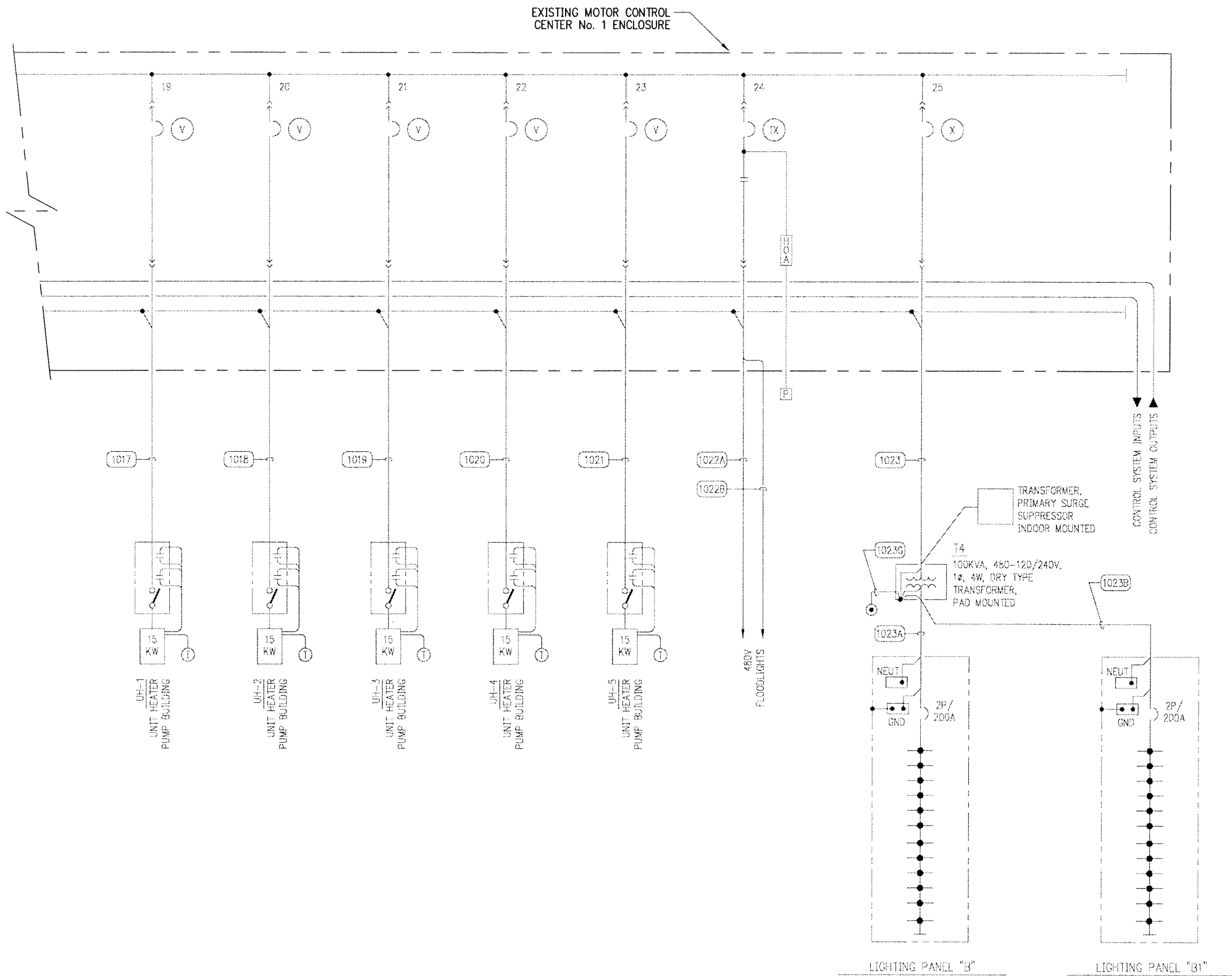
DRAWING SCALE  
NO SCALE

CITY OF HOUSTON PM  
JOHN MSICWA, P.E.

SHEET NO. OF



FOR CONTINUATION SEE SHEET E-13



| No. | Date | Revisions | App. |
|-----|------|-----------|------|
|     |      |           |      |

PRIVATE UTILITY LINES SHOWN

N/A  
CENTER POINT/GAS

N/A  
SBC CO. VALID FOR ONE YEAR  
APPROVED ONLY FOR UNDERGROUND CONDUIT FACILITIES  
UNLESS NOTED.

N/A  
CENTER POINT/ELECTRIC  
APPROVED ONLY FOR CROSSING UNDERGROUND DUCTLINES  
UNLESS NOTED. VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

**CDM**  
3050 West Oak Boulevard, Suite 300  
Houston, Texas 77056  
Tel: (713) 423-7300 Fax: (713) 840-0173  
TSPC Firm Registration No. F-3043  
consulting • engineering • construction • operations

APPROVED: MW DATE: DECEMBER 2009  
DESIGNED BY: MW DRAWN BY: JG

**KGI** Kalluri Group, Inc.  
Consulting Engineers & Project Managers  
TSPC Registration No. F-665  
10497 Town & Country Way, Suite 220  
Houston, Texas 77024  
Phone: (713)-365-9288

THIS DOCUMENT IS RELEASED  
FOR THE PURPOSE OF  
REVIEW UNDER THE  
AUTHORITY OF  
MICHAEL H. WOOLEY  
REGISTERED NO. 40433  
DECEMBER 16, 2009  
IT IS NOT TO BE USED FOR  
CONSTRUCTION, BIDDING OR  
PERMIT PURPOSES.

SURVEYED BY: CB FB NO. 2004-46

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

KATY ADDICKS RE-PUMP STATION  
BOOSTER PUMP ADDITION

**480V MOTOR CONTROL CENTER No.1**  
**ONE LINE DIAGRAM**  
**SHEET 3 OF 3**

ELECTRICAL

WARNING  
0 1  
IF THIS BAR DOES  
NOT MEASURE 1"  
THEN DRAWING IS  
NOT TO SCALE

DWG NO  
**E-14**

WBS NO.  
S-001000-0027-3

DRAWING SCALE  
NO SCALE

CITY OF HOUSTON PM  
JOHN MSIGWA, P.E.

SHEET NO. OF